**Oklahoma State University**

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**GEOL1003: The Story of Dinosaurs**



**Notes with Gaps: Dinos- Hot or Cold-blooded?**

When dinosaurs were first discovered and described ads large sluggish reptiles it was assumed that their metabolism was in fact like the reptiles they were compared to making them cold-blooded. I period in the 1960s, known as the dinosaur renaissance, lead to the examination of dinosaurs challenging many of the commonly held paradigms including the cold-blooded nature of dinosaurs. Arguments have been made for dinosaurs being each of the metabolic types listed below.

Match the metabolic type with the correct definition.

Endotherms -

Ectotherms-

Inertial homeothermy-

Mesotherms-

**a.** organism that maintains its body at a metabolically favorable temperature, largely by the use of heat set free by its internal bodily functions instead of relying almost purely on ambient heat.

**b.** Sometimes called, gigantothermy. A phenomenon whereby large, bulky ectothermic animals are more easily able to maintain a constant, relatively high body temperature than smaller animals by virtue of their smaller surface area to volume ratio.

**c.** organism in which internal physiological sources of heat are of relatively small or quite negligible importance in controlling body temperature. Such organisms rely on environmental heat sources, which permit them to operate at very economical metabolic rates.

**d.** animal with a thermoregulatory strategy intermediate to cold-blooded ectotherms and warm-blooded endotherms.

This week we will be splitting up into 5 groups to examine various aspects of dinosaur metabolism. We will then come together on Friday and decide as a class what we think about the metabolic nature of dinosaurs.

**Group 1: Evidence for Mesothermy**

Read this article and answer the following questions as you read.

What is the argument claim the authors are trying to make?

What is the evidence they have to support their claims?

How do you read the graph?

**Group 2: Comment on Evidence for Mesothermy**

Read this article and answer the following questions as you read.

What is the argument claim the authors are trying to make?

What is the evidence they have to support their claims?

How do you read the graph?

**Group 3: T-rex Comparative Anatomy**

Read this article and answer the following questions as you read.

What is the argument claim the authors are trying to make?

What is the evidence they have to support their claims?

How do you read the graph?

**Group 4: Body Temp Predictions**

Read this article and answer the following questions as you read.

What is the argument claim the authors are trying to make?

What is the evidence they have to support their claims?

How do you read the graph?

**Group 5: Leg and Hip Comparative Anatomy**

Read this article and answer the following questions as you read.

What is the argument claim the authors are trying to make?

What is the evidence they have to support their claims?

How do you read the graph?

**Consensus?**

Based on group presentations make a list of evidence in favor of cold-blooded and warm-blooded characteristics.